UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,030	03/27/2006	Robertus Theodorus Van Schaijk	NL03 1167 US1	8030

65913 7590 10/15/2010

NXP, B.V.
NXP INTELLECTUAL PROPERTY & LICENSING
M/S41-SJ
1109 MCKAY DRIVE
SAN JOSE, CA 95131

EXAMINER	
HSIEH, HSIN YI	

ART UNIT	PAPER NUMBER
2811	

NOTIFICATION DATE	DELIVERY MODE
10/15/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 10/574,030	**Applicant(s)** VAN SCHAIJK ET AL.	
	Examiner Hsin-Yi (Steven) Hsieh	**Art Unit** 2811	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 27 September 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☒ Applicant's reply has overcome the following rejection(s): See Continuation Sheet.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *1,3-7,14 and 17-19*.
   Claim(s) withdrawn from consideration: *8, 10, 11, 13, 15, and 16*.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/Lynne A. Gurley/
Supervisory Patent Examiner, Art Unit 2811

/Hsin-Yi (Steven) Hsieh/
Examiner, Art Unit 2811

Continuation of 5. Applicant's reply has overcome the following rejection(s): the rejections to clams 17-19 under 35 USC 112, frist paragraph and the rejections to claim 17-19 under 35 USC 112, second paragraph.

Continuation of 11. does NOT place the application in condition for allowance because:

1. Applicant's arguments filed 09/27/2010 have been fully considered but they are not persuasive.
2. On page 8 of Applicant's Response, regarding to the limitation "using the spacers to mitigate the diffusion of oxygen to the deposited interlayer dielectric layer", Applicant argues that the label of "functional limitation" is inapplicable to a step within a method claim. As M.P.E.P § 2114 illustrates, the law regarding the functional limitations is directed at the use of language attempting to describe the features of an apparatus based on the functions they perform in an apparatus claim. As the claims currently under examination are method claims, any distinction of particular limitations based on an assertion of the limitation as a functional limitation or includes functional language is improper.
3. The Examiner respectfully disagrees with Applicant's argument, because the limitation "using the spacers to mitigate the diffusion of oxygen to the deposited interlayer dielectric layer" is a functional limitation of the spacers which has a function to mitigate the diffusion of oxygen to the deposited interlayer dielectric layer. Furthermore, M.P.E.P § 2114 does not indicates that "functional limitation" is inapplicable to a step within a method claim. It is very common that in the method claims, there are structural elements with functional limitation and there is nothing inappropriate with using the functional limitations.
4. On pages 8-9 of Applicant's Response, Applicant argues the rejections presented in the Office Action appear to attempt to combine the spacers of the secondary '579 reference with the gate stack of the flash EEPROM device of the primary '204 reference without regards to overall teachings of either the primary '204 reference or the secondary '579 reference. The present rejection amounts to the assertion that simply finding a spacer made of a material that has oxygen diffusion an order of magnitude smaller than the oxygen diffusion through the oxide spacer results in the combination being obvious.
5. The Examiner respectfully disagrees with Applicant's argument, because '204 reference teaches the claimed invention except the spacers being formed from a dielectric material having an oxygen diffusion through the dielectric material that is, relative to oxide spacers, an order of magnitude smaller than oxygen diffusion through the oxide spacers, but this feature is taught by '579 reference by a nitride spacer, and '579 reference also teach that nitride spacer can smooth the topography. The examiner considered the overall teachings and presented the motivation.
6. On page 9 of Applicant's Response, Applicant argues that none of the asserted references teaches the claimed invention "as a whole" (§ 103(a)) including aspects regarding forming a control gate and a floating gate separated by an interlayer dielectric layer, with spacers that are both arranged and used to mitigate oxygen diffusion to the interlayer dielectric layer.
7. The Examiner respectfully disagrees with Applicant's argument, because '204 reference teaches these features clearly shown in the office actions.
8. On pages 9-10 of Applicant's Response, Applicant argues that the Examiner's rejection relies upon an assertion that if the spacers of the '579 reference were arranged in an as yet undisclosed manner to mitigate oxygen diffusion, then the cited spacers could mitigate oxygen diffusion to an interlayer dielectric material; however, nothing in the record establishes that the purported combination of an inverted-gate structure with the gate stack in the '204 reference would correspond, and nothing in the record suggests doing so in order to mitigate diffusion (in the context of the method-based limitations or otherwise).
9. The Examiner respectfully disagrees with Applicant's argument, because '204 reference already teaches a spacer to have the function of to mitigate oxygen diffusion as shown in the Office Action, i.e. the oxide spacer can mitigate oxygen diffusion. The function of mitigating oxygen diffusion is an intrinsic property of the oxide. It would be obvious to one of ordinary skill in the art to use the nitride spacer as taught by '579 reference as the spacer of '204 reference as both are spacers, and the nitride spacer as taught by '579 can also mitigate oxygen diffusion as that is its inherent property.
10. On page 10 of Applicant's Response, Applicant argues that the cited spacers in the inverted gate structure of the '579 reference cannot and do not mitigate oxygen diffusion as claimed because they are not positioned to do so. The Office Action is further silent as to how to combine the inverted-gate manufacturing approach of the '579 reference with the manufacture of a conventional gate stack for the EEPROM device in the '204 reference.
11. The Examiner respectfully disagrees with Applicant's argument, because '204 reference teaches a spacer to have the function of to mitigate oxygen diffusion as shown in the Office Action. It would be also obvious to one of ordinary skill in the art to use the nitride spacer as taught by '579 reference as the spacer of '204 reference as both are spacers.
12. On page 10 of Applicant's Response, Applicant argues that the Examiner ignores the specific teachings of the secondary '579 reference regarding the location of the asserted spacers, and argues that "the oxygen has to diffuse across the spacer before reaching the interlayer dielectric layer."
13. The Examiner respectfully disagrees with Applicant's argument, because it would be obvious to one of ordinary skill in the art to use the nitride spacer as taught by '579 reference as the spacer of '204 reference as both are spacers. Thus in combing, the location of the nitride spacer as taught by '579 reference would be at the same position of the spacer of '204 reference. The location of the nitride spacer in '579 reference is irreverent in the combination.
14. On pages 10-11 of Applicant's Response, Applicant argues that the Examiner has failed to provide any explanation as to how the inverted-gate manufacturing approach in the '579 reference, which uses a nitride spacer 37 to "smooth the topography created by the polysilicon gate 36" and to address specific problems with inverted-gate structures as in FIG. 3, would apply to the conventional gate stack of the EEPROM device in the '204 reference.
15. In response to applicant's argument that how the inverted-gate manufacturing approach in the '579 reference would apply to the conventional gate stack of the EEPROM device in the '204 reference, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).
16. On page 11 of Applicant's Response, Applicant argues that Applicant fails to recognize how this combination of teachings would result in an implementation that is operable and consistent with the objectives of the '204 reference.

17. The Examiner respectfully disagrees with Applicant's argument, because '204 reference uses the spacers and the nitride spacers of '579 reference are spacers. There is no reasons that using nitride spacers will cause the structure in '204 reference to be inoperable.
18. On page 11 of Applicant's Response, Applicant argues that while the Office Action provides no discussion as to how the dry etch in the Quirk reference would be combined with the '204 reference as modified with the inverted-gate approach as shown in the '579 reference, it appears such a dry etch would be inapplicable as there are no underlying dielectric regions due to the inverted nature of the structure.
19. The Examiner respectfully disagrees with Applicant's argument, because it would be obvious to one of ordinary skill in the art to use the nitride spacer as taught by '579 reference as the spacer of '204 reference as both are spacers. The combination would have the structure of '204 reference but with a nitride spacer. There is no issue of using a dry etch in the structure of '204 reference.
20. On page 12 of Applicant's Response, Applicant argues that Applicant maintains its traversals regarding the restriction requirement for reasons as stated in the record, as the rationale provided in support of the restriction is misguided and fails to comply with the requirements of the M.P.E.P., that the Examiner establish that a serious burden exists.
21. The Examiner respectfully disagrees with Applicant's argument, because the examiner has expressed that the undue burden during the execution is due to the claims included both device claims and method claims with multiple amendments. Thus the examiner followed the MPEP to restrict the application using "Lack of Unity of Invention" for this application is a 371 filing.